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IS 10469 (1983): Antipiping compound for foundry [MTD 14: Foundry]



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IS : 10469 - 1983

Indian Standard
SPECIFICATION FOR
ANTIPIPING COMPOUND FOR FOUNDRY

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INDIAN STANDARDS INSTITUTION
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

Indian Standard

SPECIFICATION FOR ANTIPIPING COMPOUND FOR FOUNDRY

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Indian Standard

SPECIFICATION FOR

ANTIPIPING COMPOUND FOR FOUNDRY

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 21 February 1983, after the draft finalized by the Foundry Sectional Committee had been approved by the Structural and Metals Division Council.

0.2 Antipiping compounds are basically expanding or non-expanding type materials capable of preventing rapid heat loss from the liquid metal surface in riser. A small quantity of chemical combustible material may also be mixed to improve the efficiency.

0.3 The material is used to improve riser efficiency moderately in iron and steel castings through prevention of thermal loss.

0.4 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS : 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard covers the quality requirements for exothermic and insulating antipiping compound for foundry as a feeding aid.

2. SUPPLY OF MATERIAL

2.1 General requirements relating to the supply of feeding aids shall be as specified in IS : 1387-1967†.

*Rules for rounding off numerical values (*revised*).

†General requirements for the supply of metallurgical material (*first revision*).

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3. REQUIREMENTS

3.1 The material shall be in a powdery form and moisture content shall not be more than 1.5 percent.

3.2 During use as per manufacturer's recommended rate of addition the material shall burn uniformly without any explosions.

4. PHYSICAL CHANGES ON THE TEST CASTING

4.1 The material shall comply with the requirements given in Table 1 when tested in accordance with the method given in Appendix A.

5. PACKING

5.1 The material shall be packed in polyethylene lined gunny bag. Quantity to be packed per bag shall be as agreed upon by the manufacturer and the purchaser.

6. SHELF LIFE

6.1 When stored as recommended by the supplier, the material shall not fail to meet the requirements listed in **3.0** and **4.0** within stipulated shelf life period.

7. SAMPLING

7.1 Representative sample shall be drawn as per mutual agreement between the purchaser and the manufacturer.

8. MARKING

8.1 Each bag shall be marked with the manufacturer's name, name of the material, date of manufacture and date of expiry.

8.2 The material may also be marked with the ISI Certification Mark

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act and the Rules and Regulations made thereunder. The ISI Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

APPENDIX A

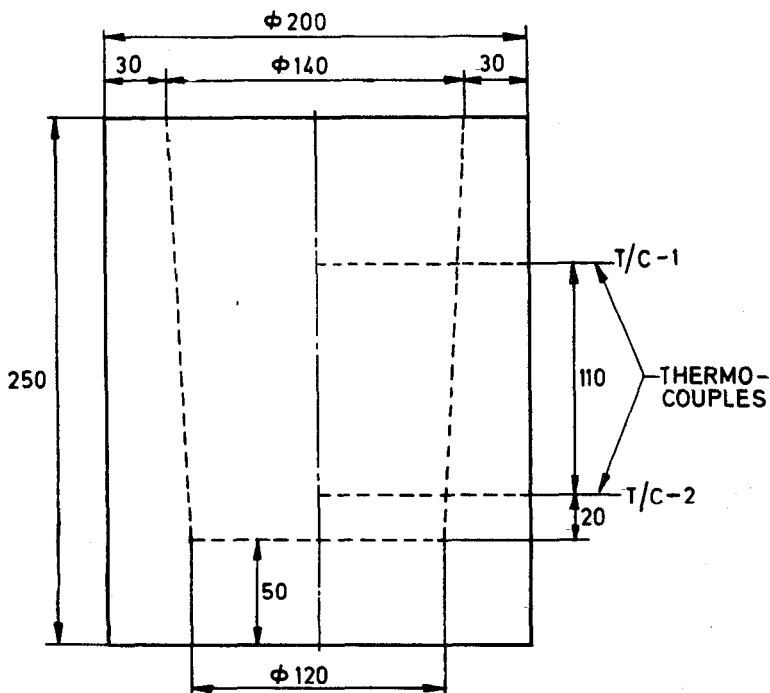
(Clause 4.1)

TEST PROCEDURE FOR EVALUATING PHYSICAL CHANGES ON THE TEST CASTING FOR ANTIPIPING COMPOUND

A-1. TESTING PROCEDURE

A-1.1 Apparatus

A-1.1.1 A mould as per Fig. 1 shall be made either by Silicate/CO₂ or oil sand process.



All dimensions in millimetres.

FIG. 1 TEST MOULDS FOR THE STUDY OF FEEDING AIDS

A-1.1.2 Two thermocouples (Pt, Pt — Rh) with silica protection sheath shall be placed as indicated in the figure and connected to suitable temperature indicator or recorder.

A-1.2 Procedure

A-1.2.1 Liquid metal, grey or white iron, having a temperature between 1 400 and 1 440°C shall then be poured in the cavity and filled up to 10-15 mm above the top thermocouple T/C-1. Immediately after the top thermocouple attains the maximum temperature, 0.5 kg (for expandable)/1.0 kg (for non-expandable) of anti-ipping compound shall be added on top of the liquid metal and temperature from both the recorders shall be noted at 15 seconds interval.

A-2. PRESENTATION OF RESULT

A-2.1 Temperatures recorded by both the thermocouples shall then be plotted against time and the data be recorded and compared with Table 1.

NOTE — To avoid mould failure during study the assembly shall be placed within an empty mould box and sides shall be filled up by green sand.

**TABLE 1 REQUIREMENTS OF ANTIPIPING COMPOUND
FOR USE IN FOUNDRIES**

(Clause 4.1 and A-2.1)

Sl No.	CHARACTERISTIC	REQUIREMENT
(1)	(2)	(3)
i)	Rate of cooling up to 1 150°C as indicated by top thermocouple T/C-1	10°C/Min (Max)
ii)	Rate of cooling up to 1 150°C as indicated by bottom thermocouple T/C-2	23°C/Min (Max)
